



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/036,912	12/21/2001	Steven Thomas Perri	32887-168168	5101

7590 10/11/2002

Cynthia B. Rothschild  
Kilpatrick Stockton LLP  
1001 W. 4th Street  
Winston-Salem, NC 27101

EXAMINER

DENTZ, BERNARD I

ART UNIT	PAPER NUMBER
----------	--------------

1625

DATE MAILED: 10/11/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/036,912

Applicant(s)

PERRI ET AL.

Examiner

Bernard Dentz

Art Unit

1625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-57 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-57 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) *21 reference*
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

Art Unit: 1625

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wedzicha et al, Adv. Exp. Med. *Biol.* cited by applicants.

It discloses at page 230 that S(IV) i.e. sulfite inhibits the anaerobic and aerobic decomposition of ascorbic acid. See especially first 3 sentences under inhibition of Ascorbic Acid Browning. See also the last 2 paragraphs of the page under oxidative browning.

Thus generally it would have been obvious for one of ordinary skill in the art to add a sulfite or sulfite ion producing substance like SO<sub>2</sub> to the reaction mixture in an ascorbic acid synthesis.

Claims 1-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reichstein, U.S. Patent 2,265,121 cited by applicants in view of Hinkley et al, U.S. Patent 3,721,663.

The former discloses that ascorbic acid can be produced by treating 2-keto-L-gulonic acid or its derivatives with an acidic aqueous solution. See page 1, column 1, lines 21-52, especially lines 36-38 and Example 2, especially page 2, line 71 to page 3, line 2.

Art Unit: 1625

Thus it is known that heating an acidic aqueous solution of 2-keto-L-gulonic acid or its derivatives will produce ascorbic acid. If it were known to use an aqueous solution of SO<sub>2</sub> as well as the more commonly known acids to perform this conversion to ascorbic acid using a 2-keto-L-gulonic acid derivative than one of ordinary skill would have been motivated to add SO<sub>2</sub> thereby forming sulfite to an aqueous solution of 2-keto-L-gulonic acid in said ascorbic acid synthesis reaction.

This is taught by Hinkley et al, which discloses the synthesis of ascorbic acid by heating an aqueous acidic solution <sup>of</sup> a lower alkyl glycoside of 2-keto-L-gulonic acid. See the Abstract, column 2, line 15 to column 4, line 11 especially, column 3, lines 37-63 and most especially column 3, lines 44 and 45 where the aqueous solution of SO<sub>2</sub> is taught as the acid catalyst.

Claims 1-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reichstein, supra in view of Hinkley et al and Wedzicha et al.

For the reasons given above the latter 2 references provide strong motivation <sup>to</sup> provide an acidic sulfite ion in the reaction mixture in the acid-catalyzed conversion of 2-keto-L-gulonic acid to ascorbic acid taught by Reichstein.

Claims 1-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reichstein in view of Wedzicha et al.

For the reasons given above the latter provides strong motivation to provide an acidic sulfite containing aqueous solution as the acidic medium in the acid catalyzed conversion of 2-keto-L-gulonic acid to ascorbic acid taught by Reichstein.

Art Unit: 1625

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bernard Dentz whose telephone number is 308-4544. The examiner can normally be reached on Monday-Friday 8 am-4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Allan Rotman can be reached on 308-4698. The fax phone numbers for the organization where this application or proceeding is assigned are 305-3592 for regular communications and 305-3592 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-1235.

Dentz:mv  
October 8, 2002

A handwritten signature in black ink, appearing to read "B. Dentz", with a stylized flourish at the end.